

Hard wiring young brains for intimacy

The essential first step to breaking generational cycles of abuse and neglect

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This article is based on a simple idea: if babies don't develop the capacity to attach to other living organisms in a meaningful and appropriately intimate way, then those babies as adults are largely incapable of forming social networks, providing social support, and being part of a sustainable civil society. This, in turn, has critical implications for community development work in terms of its scope, the expectations that can realistically be put upon a given local community to build itself into a socially cohesive entity, and the overall emphasis and timing of social policy initiatives aimed at the creation of sustainable communities.

Moreover, the development of sustainable communities is critical for supportive structural networks that enhance the health and welfare of families and children in a way that protects against abuse and neglect of children.

This relatively simple idea is predicated on some not-so-simple concepts. They include the meaning and operation of social capital, an understanding of the new knowledge of how the brain develops in the first three years of life, and the interplay of these two areas of knowledge.

I have often noticed a compartmentalisation of the notions of community development and early childhood services. My organisation, *UnitingCare Burnside* (which is a child and family agency of the Uniting Church) runs a number of Family Centres which have an early childhood focus. Where these are funded by government, we are sometimes challenged for not having a broad enough focus in terms of a wider community client base. I retort that the absolute 'best buy' that we can provide a community in terms of building its social capital is through an early childhood focus – and this is largely the implication of this paper.



The politics of attachment

While an understanding of personal and social wellbeing, based on attachment theory, is widely accepted by child welfare workers, it remains little known or truly appreciated and understood elsewhere. Rather than a sentimental notion around 'niceness' and 'motherhood', the contention here is that civil society itself – and the links between one generation and the next, the individual and the social – rests on the quality of the early attachment experiences of infants.

While it is known that babies need looking after both physically and emotionally, this emotional dimension is not widely understood as critical nutritionally (that is, biologically) for survival of life itself, and therefore for the functional survival of the community.



The implication of the development of an infant's capacity to connect and relate is that the creation of social capital is largely dependent on healthy early childhood experiences. We cannot hope to build strong sustainable families and communities without the members of the community having this critical experience-mediated capacity for social affiliation and connection.

What is social capital?

Alongside well-used terms like political, financial, and human capital, the concept of social capital has been proposed as an equally important part of the equation in terms of society and its general wellbeing. Research by Putnam (1995) and Fukuyama (1995) indicates that 'the lack of, or decline in, social capital lies behind the psychological, spiritual and economic malaise in communities throughout the world' (Wilson 1997: 745).

Social capital relates to the strength of the relationship between children and parents, and between the nuclear family and the extended community (Coleman 1988). The literature on social capital has a number of definitive common themes ascribed to the concept (Bullen and Onyx 1998: 3-4):

- Participation in networks: the notion of more or less dense interlocking networks of relationships between individuals and groups;
- Reciprocity: a combination of short-term and long-term self-interest that drives care and kindnesses between people and groups;
- Trust: a willingness to take risks in a social context;
- Social norms: providing a form of informal social control that removes the need for more formal, institutionalised legal sanctions;
- The Commons: the combined effect of trust, networks, norms and reciprocity creates a strong community, with shared ownership over resources; and
- Proactivity: the sense of personal and collective efficacy.

For Putnam, reciprocity is a key concept: the willingness of people to help one another with the expectation that they in turn can call for help.

Importantly, Putnam was not just borrowing the concept of capital to be 'cute' about how people get on together – his seminal study on Italian society (Putnam 1993) showed that social capital actually enhances economic competitiveness and overall economic prosperity. This occurs through civic engagement fostering sturdy norms of generalised reciprocity and encouraging the emergence of social trust. Social capital 'promotes business networking; shared leads, equipment and services; joint ventures; faster information flows; and more agile transactions' (Wilson 1997: 746). These networks, in turn, facilitate coordination and communication.

How does social capital work?

Social capital is about the relations between people and is fundamental for the unleashing of the potential benefits of human capital (that is, the skills and knowledge that people possess). However, because social capital is a public good (in that it is not conceived of as a direct personal gain for individuals), it is consequently not directly invested in by the

UnitingCare Burnside

UnitingCare Burnside is an agency of the Uniting Church in New South Wales that works with disadvantaged children, young people and families.

Burnside provides services including out-of-home care, family counselling, family support, alternative dispute resolution in families, support for young people who are homeless or facing crises, and activities aimed at preventing child abuse and neglect.

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Centres within the agency. He is responsible for Burnside's programs on the Central Coast, the Mid North Coast, and Orana Far West. In 1998, Paul attended the ISPCAN Conference in Auckland, New Zealand, where he first heard Professor Bruce Perry talk about his research into brain development of infants, and the implications for abuse and neglect of children.

This article has developed from that experience and continues the early intervention theme introduced in Minister Anthony's article in this *Newsletter*.

market or individuals, and is a by-product of activities not specifically designed to produce social capital (there is therefore under-investment of direct resources in building social capital) (Coleman 1998).

An important observation found in social capital literature is that: 'Social capital develops from the core building blocks of the personal capacity for trust, tolerance, value of life, and proactivity. Connections are formed, first within the family and neighbourhood, and later within wider communities' (Bullen and Onyx 1999: 6).

These building blocks are fundamental to strong families and communities, and are implicit in functional social networks and supports between people. They are seriously threatened and diminished by factors such as high growth communities, disappearing extended family support, stressful work-centered and commuting lifestyles, isolation, and the challenging transition to parenthood.

Social capital theorists describe a spiral upwards and downwards for the generation and degeneration respectively of social capital. For the upward spiral to operate, Coleman (1998) asserts that an initial threshold needs to be reached for the generation of social capital to be self-sustaining. Beyond this threshold, voluntary and spontaneous social organisation occurs. When stocks of social capital are below the threshold, the substitution of formal organisation is required to provide a 'kick start' to this process. But it is important to first understand what underpins the effective formation of these building blocks to know where the 'kick-start' point of intervention should be targeted.

Neurobiology of Brain Development

The work of Professor Bruce Perry (Perry 1998) and others (McCain & Mustard 1999; Shore 1997) shows important links between brain development in infants and the formation of social capital and sustainable communities.

The brain does not arrive at birth 'pre-wired' – hard wiring of the brain occurs at critical periods during the first few years of life. It was thought that the structure of the brain was genetically determined at birth. It is now known that the experiences that fill a baby's first days, months and years have



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a decisive impact on the architecture of their brains and the nature and extent of their adult capacities.

One of the first realisations about the post-natal wiring of the brain came out of the observation that children born with cataracts who had them removed later in childhood still could not see normally. This was because the critical period of sensory input for the neuronal hard wiring of the brain related to visual functionality (occurring during the first months of life) had been missed. This observation about learning and development applies to behavioural, mental and physical long-term health outcomes as well. Adults who started learning stringed instruments at age three show three times the levels of cortical brain activity (related to touch functionality) compared to those who never learned, with those starting to learn

at age five having twice the cortical activity (Perry, 1998).

At birth, while the brain has a broad potential that is determined by genetics, experience not genetics is responsible for broad deficits in functioning. The genetic potential through experience may be maximised or minimised. The same child, through differing early childhood experience, may grow to become an aggressive, unattached person, or a creative, self-soothing, flexible one.

The brain develops in a sequential manner from the more primitive brain stem functions (regulating heart beat and temperature) to more complex cortex functions such as abstract thought. In this hierarchical sequential development, optimal organisation of higher order complex functions is dependent on how well earlier, less complex brain organisation has proceeded.

Timing is crucial. In well-organised brains, this development occurs according to a genetically-determined biological timetable and the right experiences given at the right time, matching that timetable, either fulfil or do not fulfil the developmental schedule. The landmarks in the first three years of course mirror the biological timetable of brain development. By the age of three, most of the brain systems are in place and it is more difficult from then to change an already organised system. Missing these windows of opportunity ('critical' or 'plastic' periods) means missing being able to meet the genetic potential of that system.

Biological relativity refers to the concept that any experience will have much more impact on a rapidly changing system than on a stable system. The developing brain is an incredibly fast-moving system in the first three years of life. At birth, it is consuming about 65 per cent of calorie intake compared to about 15 per cent for mature adults. The rate of change of the brain in an infant is about 100,000 times greater than the rate of change for a mature brain.

This has important implications for the nutritional value of touch. Touch is a trigger for the release, by the brain, of hormones necessary for calorie use. The Spitz studies (Spitz & Wolf, 1946) and the Romanian orphans' experience have shown the importance of human contact for the growing organism. Biological relativity explains why babies can die if they are not touched for a couple of weeks – and leaving babies without this input for hours can be a form then of child neglect on a par with months of solitary confinement for an adult.

The brain develops and organises in a use-dependent fashion. There are about twice the number of synapses in the brain at the beginning of life compared with when it is fully developed (and it is about 85 per cent developed by age three). These synapses either survive or fail to survive based on a sculpting process of these undeveloped and undifferentiated neurons whereby sensory activation of synaptic connections reinforce some over others. The repetitive neuronal experience and activity of the growing brain ensures that certain synaptic connections are maintained through the genetically determined developmental timetable. This sculpting or pruning away of little-used synapses occurs together with the reinforcing of repeated experiences producing permanent synaptic patterns. The process means that positive and negative experiences in the first years of life influence how children will be wired as adults.

Where there is no patterned sensory experience (for example, if the baby is not consistently responded to by being picked up and held when distressed), then the brain does not internalise a positive association for that experience. A brain memory template is formed so that future distress is then interpreted as new or threatening and the child doesn't learn to self-soothe based on the pattern of 'someone usually comes' (Perry, 1998). The brain hates surprises and treats any new experience initially as negative and stressful until patterned responses set up a positive memory template. So when a healthy 'someone will come' expectation is missing, new experiences are not recognised as positive compared to previous conditioned experience. For social communication and affiliation, the consequence for social connection with new people throughout life is huge here where, as babies, people have missed these positive conditioning experiences. Being connected to each other is then a neurobiologically mediated function (Perry, 1998).

In cases of infant abuse or neglect by the primary caregiver, the primary template for interaction is negative and stressful, which is then generalised to all personal relationships.

Such stressful states (which were adaptive for the baby under threat) become maladaptive traits in the adult and the brain develops a sustained position of high arousal or dissociation. Since the establishment of this trait is happening at a time when biological relativity means that the moment is so intense, it follows that survival in the moment becomes the over-riding concern of that individual.

Sphere of concern and social capital formation

Just as parts of the brain are specifically dedicated to seeing properly, others are dedicated to social affiliation and attachment. Part of the brain is literally activated in response to inter-communication and touch. These experiences can be described for an infant as a 'somato-sensory bath' (as important to sustaining life as food and water). The interaction between infant and caregiver (movement, sound, sight, smell, touch) causes patterned neuronal activity that goes to a part of the brain that organises empathy, social affiliation, and responsibility for other people. This development starts in the womb as the foetus experiences the soothing constancy of maternal heartbeat, warmth, and nourishment.

This is all involved in what Perry (1998) calls the 'sphere of concern' of the individual. There is a neurobiology to this part of the brain that is involved in social affiliation and attachment. That the brain is biased to social affiliation and attachment explains our survival as a species. We survived because we were connected, not because we were smart. Attached came first, and smart came later!

'Sphere of concern' which makes us feel connected to and responsible for other people is related to attachment, which is related to reward. There is a relationship between the reward part of our brain and the attachment part of our brain. When a newborn baby is picked up by a mother with a healthy neurobiology, reward will be experienced by that mother as an automatic self-reinforcing process. The smell, sound, and touch of the baby all build strong healthy positive attachment crucial for the survival and thriving of the baby. If the mother does not have that healthy neurobiology (and we have all seen this in our work), there is no 'kick-in'

Protecting Children Online

- Tell children never to give out personal information such as surname, address, telephone number
- Remind children that people are not always who they say they are online
- Supervise your child's use of the Internet and become computer literate
- Organisations or schools should never post photos of children with any identifying information on the Internet
- Tell your child never to arrange a face to face meeting with some one they have met on the Internet
- Ask your child to immediately exit any chatroom or shut down from any site that has suggestive, obscene or harassing messages and to report the site to a teacher or parent. Tell them never to respond to such messages
- Use blocking software such as Net nanny and Cyber Patrol that will filter out sites

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of this self-perpetuating reward and response attachment process between mother and infant. The co-development of the reward and attachment systems is a function of experience. That part of the mother's brain that is activated by baby's smile is either there or not, based on the mother's own early experiences.

Low level of 'sphere of concern' can then be a reflection of brain impairment of these systems. It is the same process of adaptive state becoming maladaptive trait that was mentioned earlier. In this case the maladaptation affects our communal survival. As the sphere of concern shrinks, we literally are functioning more and more at the primitive levels of the brain – the basic individual survival levels of the primitive brain stem.

The glue of a community is social affiliation and connection which are the building blocks of social capital. Community concern cannot be expected when the sphere of concern is tiny. Individuals so affected cannot be expected to be ready for cognitive work in terms of appropriate therapeutic

intervention, let alone be capable of meaningful engagement in civic interaction and community.

All this has critical implications about things like how long infants should be exposed to television: 30 per cent of their time in front of a TV means 30 per cent less time to experience social affiliation. If 50 per cent of an infant's waking hours is spent vying for the attention of a caregiver who is neither bonded to him/her, nor able to give adequate one-to-one time to ensure this somato-sensory bath at the appropriate times, this can have huge implications for social affiliation and attachment.

Brofenbrenner's (1979) ecological model of social inter-relationships combines powerfully with the concept of 'sphere of concern'. Apart from where 'sphere of concern' is a diminished trait from early childhood experiences, it can be seen how, for otherwise well-developed individuals, the threat to livelihood and wellbeing (for example, through poverty and lack of social infrastructure) can also diminish their 'sphere of concern' and thus reduce social capital.



We welcome your contributions to this Newsletter

The Child Abuse Prevention Newsletter is published twice a year, in March/April and September/October. If you think you have articles or other items of relevance which would interest our readership, we would like to hear from you.

Readership and contents

The Newsletter is designed to provide information to service providers, policy officers, researchers, and students in the area of child abuse prevention.

The contents of each Newsletter comprise a mix of contributions from Clearinghouse staff at the Australian Institute of Family Studies and writers in the child abuse prevention area generally. Contributions are concerned with practice, training, research, policy, and legislation, and news or reviews of recent relevant publications are also published. Regular Newsletter features include a literature highlights section on recently published material received by Clearinghouse, and a comprehensive listing of forthcoming conferences and workshops.

Writing guidelines for authors

We prefer clearly written, jargon-free, accessible articles of interest to the broad range of Clearinghouse clients and Newsletter subscribers.

Length: items may range from very short contributions such as notices or news items, to essays and research articles ranging from 2500–4000 words.

Graphic material: graphs and tables should be used sparingly and should be uncomplicated and accessible; photographs are welcomed.

Title and headings: a short abstract of the main emphasis of the article should follow the title, and succinct headings throughout are required for the purpose of guiding the reader.

Referencing: the Harvard (author–date) style of referencing is used.

Biographical note: items should be accompanied by the author's name and affiliation.

Presentation: the electronic provision of material, while not essential, is much appreciated.

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In the light of biological relativity, and the significance of early brain development, there is strong evidence that many more dollars are saved for each spent where interventions are targeted at the early years than later.

So back to our earlier question: where is the appropriate point for the 'kick start' of Putnam's virtuous cycle of social capital formation? I think its clearly in the early years (0-3 years) of child development.

Conclusion

In conclusion, the implication of the development of an infant's capacity to connect and relate is that the creation of social capital is largely dependent on healthy early childhood experiences.

We have to get this link firmly established in the minds of our policy makers to ensure that what we do now has the required positive impact on our social living experience (and indeed our health and wellbeing) thirty years from now.

According to Guntrip (1971: 114): 'If human infants are not surrounded by genuine love from birth, radiating outward into a truly caring family and social environment, then we pay for our failure toward the next generation by having to live in a world torn with fear and hate . . . The importance of security for babies and mothers outweighs every other issue. If that is not achieved, everything else we do merely sustains human masses to struggle on from crisis to crisis.'

References

- Bullen, P. & Onyx, J. (1998), 'Measuring social capital in five communities in New South Wales: overview of a study', Internet transcript (March), (<http://www.mapl.com.au/A2.htm>).
- Bullen, P. & Onyx, J. (1999), *Social Capital: Family Support Services and Neighbourhood and Community Centres in NSW*, Family Support Services Association, Sydney.
- Brofenbrenner, U. (1979), *The Ecology of Human Development: Experiments by Nature and Design*, Harvard University Press, Cambridge.
- Coleman, J. (1998), 'Social capital in the creation of human capital', *American Journal of Sociology*, vol. 94, Supp pp. 95-120.
- Fukuyama, F. (1995), *Trust: The Social Virtues and the Creation of Prosperity*, Free Press, New York.
- Guntrip, H. (1971), *Psychoanalytic Theory, Therapy and the Self: A Basic Guide to the Human Personality in Freud, Erickson, Klein, Sullivan, Fairbairn, Hartmann, Jacobson & Winnicott*, Basic Books, New York.
- McCain, M. & Mustard, F. (1999), 'Reversing the brain drain: Early Years Study, Final Report', Report to the Ontario Government. Available at website: <http://www.childsec.gov.on.ca/newsrel/reporten.pdf>.
- See also ABC Background Briefing, 3 October, Transcript available from: <http://www.abc.net.au/rn/talks/bbing/stories/s57732.htm>
- Putnam, R. (1993), *Making Democracy Work: Civic Traditions in Italy*, Princeton University Press, New Jersey.
- Perry, B. (1998), Tapes of four presentations as keynote to the Twelfth International ISPCAN Conference, Auckland, September. An example of Perry's work in print: Perry, B., Pollard, R., Blakley, T., Baker, W. et al. (1995), 'Childhood trauma, the neurobiology of adaptation and "use-dependent" development of the brain: how "states" become "traits" ', *Infant Mental Health*, vol. 16, no. 4, pp. 271-291. See also: <http://www.bcm.tmc.edu/civitas/>

Putnam, R. (1995), 'Bowling alone: American declining social capital', *Journal of Democracy*, vol. 6, no. 1, pp. 65-78.

Shore, R. (1997), *Rethinking the Brain: New Insights into Early Development*, Families and Work Institute, U.S.A.

Spitz, R.A., & Wolf, K.M. (1946). 'Anaclitic depression: an inquiry into the genesis of psychiatric conditions in early childhood. II', *Psychoanalytic Study of the Child*, vol. 2, pp. 313-342.

Wilson, P. (1997), 'Building social capital: a learning agenda for the twenty-first century', *Urban Studies*, vol. 34, no. 5-6, pp. 745-760.

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Further reading



Further reading in this area may be found in an edited collection published by the Australian Institute of Family Studies – *Social Capital and Public Policy in Australia*.

Edited by Ian Winter, this book is the result of a collaboration between the Australian Institute of Family Studies and a group of Australia's social capital researchers and commentators. Its objective is to link ideas about the nature of social capital to the development of public policy in Australia. The collection comprises the following chapters:

- Social capital and public policy in context, by Ian Winter;
- Major themes and debates in the social capital literature: the Australian connection, by Ian Winter;
- Making policy social, by Eva Cox and Peter Caldwell;
- Social capital, active citizenship and political equality in Australia, by David Hogan and David Owen;
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- Non-profit organisations, social capital and social policy in Australia, by Mark Lyons;
- If only men were angels: social capital and the Third Way, by Mark Latham;
- Building social trust through education, by Philip Hughes, John Bellamy and Alan Black;
- Families, social capital and health, by Fran Baum, Catherine Palmer, Carolyn Modra, Charlie Murray and Robert Bush;
- Trick or treat? Social capital, leadership and the new public policy, by Martin Stewart-Weeks.

Social capital and Public Policy in Australia, edited by Ian Winter, Australian Institute of Family Studies, 2000. 344 pages, \$33 plus \$3 postage. Contact the Australian Institute of Family Studies on (03) 9214 7888 to order.